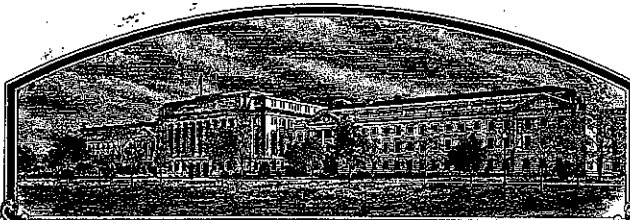


No.

200200074



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Hennington Seed, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR PLANT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (34 U.S.C. 4321 ET SEQ.)

RYEGRASS, PERENNIAL

'Integra'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty-second day of November, in the year two thousand and four.



[Signature]
Assistant Secretary of Agriculture

[Signature]
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) 708 11/4/04 Pennington Seeds, Inc.		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER FPT	3. VARIETY NAME Integra
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) P. O. Box 290 Madison, GA 30650		5. TELEPHONE (include area code) (404) 342 - 1234	FOR OFFICIAL USE ONLY PVPO NUMBER 200200074
		6. FAX (include area code) (404) 342 - 9644	
7. GENUS AND SPECIES NAME <i>Lolium perenne</i>	8. FAMILY NAME (Botanical) <i>Poaceae</i>		FILING AND EXAMINATION FEE: \$ 2705
9. CROP KIND NAME (Common name) Perennial Ryegrass			DATE 1/23/2002
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common Name) Corporation			CERTIFICATION FEE: \$ 432
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION 02-12-98	DATE 10/13/2004
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Ronnie Stapp P. O. Box 290 Madison, GA 30650			14. TELEPHONE (include area code) (404) 342 - 1234
			15. FAX (include area code) (404) 342 - 9644
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasure of the United States" (Mail to PVPO)			
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)			
<input type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <input checked="" type="checkbox"/> No (If "no," go to item 20)			
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?		19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDERS SEED?	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED	
20. HAS THE VARIETY OR HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?			
<input type="checkbox"/> YES (If "yes," give names of countries and dates) <input checked="" type="checkbox"/> NO			
21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.			
The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.			
Applicant(s) is (are) informed that false representations herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT (Owner(s)) <i>Ronnie Stapp</i>		SIGNATURE OF APPLICANT (Owner(s))	
NAME (Please print or type) Ronnie Stapp		NAME (Please print or type)	
CAPACITY OR TITLE <i>Executive Vice President</i>		CAPACITY OR TITLE	
DATE 1/22/02		DATE	

Exhibit A:**1. Origin and Breeding History****Integra (FPT) Perennial Ryegrass**

'Integra' (FPT) perennial ryegrass (*Lolium perenne* L.) is an advanced generation synthetic cultivar selected from the maternal progenies of 35 clones. Twenty-nine of these maternal parents contained a *Neotyphodium* endophyte. Twenty-three similar and related clones served as additional pollen sources in an isolated crossing block at the Rutgers University Plant Science Research and Extension Farm at Adelphi, New Jersey.

Approximately 95 percent of the parental germplasm of 'Integra' traces to large, attractive plants persisting in old turfs in New York City, New Jersey, Pennsylvania, and Maryland. These plants had persisted to form turfs ranging from one to four meters in diameter at the times of their collection from 1962 to 1982. The origin of the seed used to establish these turfs is unknown. All selected plants appeared to have originated as individual seedlings which had persisted and spread over periods exceeding thirty years. The remaining ancestral germplasm traces to a plant selected from PI 197,270 originating in Finland; a plant selected from PI 231,587 originating in Greece; plants selected from populations used in the development of 'Citation' (Bailey et al., 1978), and 'Manhattan II' (Funk et al., 1984); and plants selected from 'Loretta' and 'Caravelle'.

Plants selected from old turfs and other sources were evaluated in frequently mowed clonal tests, disease screening trials, spaced-plant nurseries, and extensive single-plant progenies maintained as turf. Progenies from intercrossing the best performing plants were subjected to many cycles of population improvement. This involved phenotypic and genotypic recurrent selection combined with population backcrossing as appropriate. New germplasm was added as opportunities arose. Many separate germplasm composites were maintained and later intercrossed to maintain a high level of heterozygosity and genetic variation. Selection was directed to lower-growing, leafy plants with a bright, rich, darker-green color, improved mowing qualities especially under heat stress, medium reproductive maturity, higher levels of pest resistance and stress tolerance, and more economical seed yields.

Two spaced-plant nurseries were established in the spring of 1996 at the Adelphia research farm. These nurseries contained 3,240 plants selected from turf trials established in 1994 and 1995. Forty-six plants were selected from these nurseries in the fall of 1996 and transferred to a replicated crossing block. Seed harvested from 58 of the 92 rows was used to establish single-plant progeny

turf plots at Adelphia in late August, 1997 and also establish a nursery consisting of 2,400 plants. Fifty-eight plants were selected from this nursery and moved to an isolated crossing block on May 25, 1998. This was immediately prior to anthesis. Selection was based on progeny performance in turf plot, medium reproductive maturity, a rich dark-green color, freedom from stem rust, and uniform leafy growth. Seed was subsequently harvested from 35 plants showing high seed yield with good floret fertility. This seed was used to establish single-plant progeny turf trials at Adelphi and a spaced-plant nursery in Albany, Oregon August, 1998.

In the fall of 1998 a seed increase block containing plants of 35 progeny lines (2,100 total plants), was established in Albany, Oregon. In 1999 negative mass selection was used and 30 % of the plants were rogued from the population. The remaining plants were harvested in bulk and the seed was used to establish a morphological nursery for Plant Variety Protection (PVP) measurements.

- 1) Bailey, R.H., B.L. Rose, C.R. Funk, and W.A. Meyer. 1998. Registration of 'Citation' perennial ryegrass. Crop Sci. 18:914.
- 2) Funk, C.R., W.A. Meyer, and B.L. Rose. 1984. Registration of 'Manhattan II' perennial ryegrass. Crop Sci. 24:823-824.

2. Breeder Seed Maintenance:

A breeder seed block was planted in isolation in 1998. Breeder seed was harvested in bulk (30 %) rogued, in 1999 and is maintained in cold storage. Seed propagation is limited to three generations, one each of foundation, registered, and certified.

3. Stability and Uniformity:

Integra (FPT) is a stable uniform cultivar. Stability and uniformity has been observed in two generations of multiplications; breeder seed and foundation. Turf plots of Integra (FPT) have also been uniform. Neither off-type or variant plants have been observed in the multiplication process.

Exhibit B:**Novelty Statement for 'Integra' (FPT) Perennial Ryegrass**

The following summary outlines the distinctive characteristics of 'Integra'. The novelty of 'Integra' is based on the unique combination of these characteristics. 'Integra' is most similar to 'Manhattan', but may be differentiated using the following criteria:

- 1) The genetic color of Integra is darker than Manhattan (tabels 1A, 1B).
- 2) The mature plant height of Integra is at least 9 cm shorter than Manhattan (tables 1A, 1B).
- 3) Integra has a spike length (upper most node of inflorescence to apex) shorter than Manhattan (tables 1A, 1B).
- 4) The flag leaf characteristics; length, height, sheath length of Integra are shorter than Manhattan (tables 1A, 1B).
- 5) The leaf blade characteristics; length, height, sheath length of Integra are shorter than Manhattan (tables 1A, 1B).
- 6) Integra has a shorter lemma length than Manhattan (tables 2A, 2B).

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this collection of information is (0581-0055). The time required to complete this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all of its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited basis apply to all programs.) Persons with disabilities who require alternative means of communication of program information (Braille, large print, audiotape, etc.) Should contact the USDA's TARGET Center at 220-720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURE MARKETING SERVICE
SCIENCE AND TECHNOLOGY PROGRAM
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

**EXHIBIT C
(RYEGRASS)**

**OBJECTIVE DESCRIPTION OF VARIETY
RYEGRASS
(*Lolium* spp.)**

NAME OF APPLICANT(S) 7as 11/4/04 Pennington Seeds, Inc.	TEMPORARY DESIGNATION FPT	VARIETY NAME Integra
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) P. O. Box 290 Madison, Georgia 30650		FOR OFFICIAL USE ONLY PVPO NUMBER 200200074

Place the appropriate number that describes the varietal characteristics of this variety in the boxes below. Use leading zeros when necessary (e.g. 089). Descriptions of characters should represent those that are typical for the variety. Ranges may be given also. Measured data should be for SPACED PLANTS. Give additional description for all characteristics that cannot be adequately described in the form below. Append all pertinent comparative trial and evaluation data. The symbol "►" indicates decimal.

1. SPECIES:

2 1 = *L. multiflorum* (annual or italian: includes Westerwoldicum) 2 = *L. perenne* (perennial) 3 = *L. rigidum* (includes Wimmeria)

4 = Hybrid (of species): _____ 5 = Other (Please specify): _____

2. PLOIDY:

1 1 = Diploid 2 = Tetraploid 3 = Other (Please specify): _____

3. DURATION:

3 1 = Annual or Biennial 2 = Short lived perennial (3-4 years) 3 = Perennial (more than 4 years)

STANDARD CULTIVARS

1 = GULF 2 = WIMMERIA 3 = LINN 4 = PELO
5 = NORLEA 6 = ABERYSTWYTH S-23 7 = MANHATTAN 8 = PENNFINE

4. MATURITY (50% HEADED) Use standards from above for comparison:

5 1 = Very Early 3 = Early 1 DAYS EARLIER THAN... _____ STANDARD CULTIVAR
5 = Medium 7 = Late 4 DAYS LATER THAN... 7 STANDARD CULTIVAR

5. MATURE PLANT HEIGHT (Use standard cultivars from above):

69.27 cm High 14.63 cm Shorter than..... 7 STANDARD CULTIVAR
_____ cm Taller than _____ STANDARD CULTIVAR

6. **PERCENT WINTER DAMAGE** (estimated as percent of the area appearing dead. Use standard cultivars for comparison): Percent Damage of Application Cultivar Percent Damage of STANDARD CULTIVAR7. **TURF DENSITY** (Use standard cultivars from above): Tillers per 100 square cm Less tillers per 100 square cm than... STANDARD CULTIVAR More tillers per 100 square cm than... STANDARD CULTIVAR8. **FLAG LEAF** (at full growth, use standard cultivars from above):17.20 cm Length (from ligule to tip) 5.00 mm Width (at widest point)3.90 cm Shorter than 7 STANDARD CULTIVAR 7 Flag Leaf at Boot Stage 1 = Deflexed
3 = Recurved ▲ cm Longer than STANDARD CULTIVAR 5 = Horizontal
7 = Semi-Erect0.67 mm Narrower than..... 7 STANDARD CULTIVAR 9 = Erect mm Wider than STANDARD CULTIVAR9. **LEAVES:**3 Vernation 1 = Leaves rolled in young shoots 2 = Leaves semi-rolled (folded with rolled edges)
3 = Leaves folded in young shoots0 % Plants with anthocyanin in lower leaf sheath 3 Foliage Color: 1 = Yellow Green
2 = Medium Green
3 = Blue Green10. **SPIKE:**39.33 mm Spike length (tip to internode below lowest floret)10.4 mm Shorter than 7 STANDARD CULTIVAR mm Longer than STANDARD CULTIVAR70.33 mg per ten spikes (trimmed to internode below lowest floret)24.67 mg lighter per ten spikes than 7 STANDARD CULTIVAR mg heavier per ten spikes than STANDARD CULTIVAR9.00 florets per spikelet

PERCENTAGE OF PLANTS WITH:

Rachis: 100 % Smooth % RoughSpike Color: 97.0 % Green 3.00 % PurpleLemma: 0.00 % Awned mm Awn length 8.27 mm Glume length

10. SPIKE (Continued)

- 2 1 = Spikelet length nearly equal to outer glumes
 2 = Spikelet length much longer than outer glumes

11. COLEOPTILE:

67.70 % Plants with anthocyanin in coleoptile

12. ANTHHER COLOR:

 % Plants with white anthers 100 % Plants with yellow anthers
 % Plants with purple anthers

13. ROOT AND PLANT CHARACTERISTICS:

 % Plants with prostrate growth habit
1.07 % Plants with fluorescent roots
100 % Plants with upright growth habit

14. SEED:

1830 mg per 1000 seeds 58.30 mm Total length of 10 seeds 12.00 mm Total Width of 10 seeds

15. DISEASE (0 = Not Tested, 2 = Highly susceptible, 4 = Moderately Susceptible, 5 = Moderately Resistant, 8 = Highly Resistant)

0 Crown Rust (*Puccinia coronata*) 0 Dollar Spot (*Sclerotinia*)
0 Brown Patch (*Rhizoctonia*) 0 Leaf Spot (*Helminthosporium*)
0 Mildew 0 Snow Mold (*Typhula*)
0 Red Thread (*Corticium*) Other (Please Specify):

16. INSECT: (0 = Not Tested, 2 = Highly susceptible, 4 = Moderately Susceptible, 5 = Moderately Resistant, 8 = Highly Resistant)

 Please Specify:

17. Give resemblance value in left column and variety code number in right column for variety with which comparison is made (1= less than, 2 = same as, 3 = more erect, more resistant, denser, more persistent, darker or greater height):

Resemblance	Character	Similar Variety
<u>2</u>	Plant Habit (erectness)	<u>7</u> 1 = GULF
<u> </u>	Tillering	<u> </u> 2 = WIMMERIA 62
<u> </u>	Winter Hardiness	<u> </u> 3 = LINN
<u> </u>	High Temperature Stress Resistance	<u> </u> 4 = PELO
<u>3</u>	Turf Persistence	<u>7</u> 5 = NORLEA
<u>3</u>	Plant Color	<u>7</u> 6 = ABERYSTWYTH S-23
<u>1</u>	Vertical Seedling Growth Rate	<u>7</u> 7 = MANHATTAN
<u>3</u>	Crown Density	<u>7</u> 8 = PENNFINE
<u>3</u>	Mower Shredding Resistance	<u>7</u>

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18. GIVE AREA OF ADAPTATION AND INTENDED USE: Integra is adapted to regions where perennial ryegrass is used for turf.

19. GIVE AREA TEST RESULTS PRESENTED FROM: Albany, Oregon

20. COMMENTS:

A morphological nursery designated 99PVPLP1 was established in September of 1999, in Albany, Oregon. Experimental design consisted of 19 entries; 3 replications per entry; 20 plants per replication; for a total of 60 plants per entry. Charger, and Manhattan were used as standards. Plants were established on 2.5 foot centers with a skip row between replications and between entries.

The nursery received 30 pounds of nitrogen per acre rate following establishment and 50 pounds of nitrogen per acre per year in 2000 and 2001. The fertilizer source was 15-15-15 and was applied as a split application with ½ applied in the spring and ½ in the fall. The nursery was sprayed twice each spring, 3 weeks between applications, with Tilt (2 oz/acre rate), to prevent stem rust. One pound of Karmex per acre rate was applied during late summer to prevent emergence of volunteer seedlings.

Data was analyzed using analysis of variance for a randomized complete block design. Means were calculated for each replication and then analyzed.

Exhibit D:**Additional Description****Integra (FPT) Perennial Ryegrass**

Integra is an improved turf-type perennial ryegrass. It exhibits a dwarf growth habit and a blue-green genetic color compared to Manhattan (tables 1A, 1B). Integra is of medium maturity with a heading date equal to Manhattan but later than Charger (tables 1A, 1B). Integra has a decreased spike length compared to Charger and Manhattan (tables 1A, 1B). The mature plant height for Integra is shorter than Manhattan and Charger (tables 1A, 1B). The flag leaf length and the sheath leaf length of Integra are decreased in length compared to Manhattan and Charger (tables 1A, 1B). Integra has a shorter leaf blade length and leaf sheath length than both Manhattan and Charger (tables 1A, 1B). The lemma length and the glume length of Integra are shorter than Manhattan and Charger (tables 2A, 2B). The spikelet characteristics; length, floret number, and weight are all decreased compared to Charger and Manhattan (tables 2A, 2B). Integra exhibits a shorter length from the lower most spikelet to the tip of the spike than Manhattan and Charger (tables 2A, 2B). Expression of anthocyanin in the seedling coleoptile is higher for Integra compared to Manhattan or Charger (tables 3A, 3B). Integra produces fewer purple panicles than Manhattan and Charger (tables 3A, 3B). Integra produces a higher frequency of panicles in re-growth compared to Manhattan and Charger (tables 3A, 3B). The seed weight of Integra is greater than Charger but less than Manhattan (tables 3A, 3B).

Table 1A 2000 Morphological Data

Cultivar	Heading Date (days after April 1)	Anthesis Date (days after April 1)	Genetic Color	Mature Plant Height (cm)	Plant Width (cm)	Panicle Length (cm)	Flag Leaf Length (cm)	Flag Leaf Width (cm)	Flag Leaf Height (cm)	Flag Leaf Sheath Length (cm)	Flag Leaf Internode Length (cm)	Leaf Blade Length (cm)	Leaf Blade Width (cm)	Leaf Blade Height (cm)	Leaf Sheath Length (cm)
FPT	44.67	68.67	5.67	69.27	20.33	39.33	28.77	5.00	41.23	11.57	12.27	26.27	4.33	25.33	8.10
Charger	32.67	59.00	4.00	80.63	19.30	49.90	32.53	6.00	43.03	13.03	13.07	28.60	5.00	25.77	9.00
Manhattan	40.67	66.00	3.67	83.90	22.27	49.73	34.83	5.67	47.80	13.73	14.13	28.60	5.33	29.23	9.93
LSD (5%)	1.91	1.91	.074	4.85	1.65	2.62	1.88	0.65	3.25	0.58	1.37	2.01	0.53	2.63	0.55
C.V.	3.42	2.12	10.86	4.68	5.87	4.18	4.30	8.53	5.59	3.31	7.84	5.01	7.49	7.44	4.47

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.

- Cultivar under evaluation.
- Significant difference over two years one location.
- Significant difference over one year one location.

Table 1B 2001 Morphological Data

Cultivar	Heading Date (days after April 1)	Anthesis Date (days after April 1)	Genetic Color	Mature Plant Height (cm)	Plant Width (cm)	Panicle Length (cm)	Flag Leaf Length (cm)	Flag Leaf Width (cm)	Flag Leaf Height (cm)	Flag Leaf Sheath Length (cm)	Flag Leaf Internode Length (cm)	Leaf Blade Length (cm)	Leaf Blade Width (cm)	Leaf Blade Height (cm)	Leaf Sheath Length (cm)
FPT	46.33	65.00	5.00	58.60	26.00	32.07	22.60	4.00	38.00	10.50	9.20	23.27	4.00	25.70	7.43
Charger	36.33	59.00	5.00	69.43	24.73	39.43	26.40	4.00	40.33	11.33	11.03	27.73	3.67	25.70	8.17
Manhattan	45.00	64.67	4.33	68.13	26.77	36.90	27.40	4.00	42.97	12.03	9.67	27.60	4.33	28.93	8.63
LSD (5%)	1.61	1.38	0.30	3.91	4.20	2.23	1.37	0.43	2.66	0.59	1.11	1.53	0.50	2.22	0.52
C.V.	2.64	1.57	4.42	4.45	11.86	4.64	4.01	8.02	4.89	3.87	8.40	4.33	8.95	6.10	4.75

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.

- Cultivar under evaluation.
- Significant difference over two years one location.
- Significant difference over one year one location.

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Table 2A
2000 Laboratory Morphological Data

Cultivar	Lemna Length (mm)	Lemna Width (mm)	Glume Length (mm)	Florets per Spikelet	Spikelet Length (mm)	Spikelets per Panicle	Weight of 10 Spikelets (mg)	Length of Panicle From Lower Most Spikelet to Tip (cm)
FPT	5.83	1.20	8.27	9.00	14.83	21.67	70.33	18.93
Charger	6.43	1.27	9.97	10.00	17.80	23.67	126.00	24.17
Manhattan	6.20	1.30	9.27	10.00	17.30	26.33	95.00	24.80
LSD (5%)	0.21	0.07	0.57	0.97	1.15	1.90	14.25	1.28
C.V.	2.39	3.90	4.58	7.55	5.08	5.61	11.43	4.25

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.

■ Cultivar under evaluation.

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Table 2B
2001 Laboratory Morphological Data

Cultivar	Lemna Length (mm)	Lemna Width (mm)	Glume Length (mm)	Florets per Spikelet	Spikelet Length (mm)	Spikelets per Panicle	Weight of 10 Spikelets (mg)	Length of Panicle From Lower Most Spikelet to Tip (cm)
FPT	5.37	1.20	6.97	6.00	11.07	24.67	42.33	16.37
Charger	6.13	1.30	8.20	7.67	13.93	22.67	77.67	20.00
Manhattan	5.77	1.30	7.23	6.00	11.67	25.33	49.00	19.40
LSD (5%)	0.23	0.10	0.46	0.90	0.63	1.36	7.62	1.03
C.V.	2.88	5.78	4.53	10.72	3.92	4.08	11.02	4.23

Measurements taken in Albany, Oregon; 3 reps; 20 plants/rep = 60 data points.

■ Cultivar under evaluation.

■ Significant difference over two years one location.

■ Significant difference over one year one location.

Table 3A 2000 Additional Morphological Measurements of the Panicle

Cultivar	Panicle Branch Pubescence % Present	Lemma Awn % Present	Leaf Blade Anthocyanin % Present	Seedling Anthocyanin % Present	Rachis of Panicle % Smooth	Seed Weight (mg per 1000 seeds)	Anther Color % Purple	Panicle Color % Purple	Panicle Re-Growth in Fall % Re-Grown	Flag Leaf Boot Stage % Re-curve	Flag Leaf Boot Stage % Horizontal	Flag Leaf Boot Stage % Semi-Erect	Flag Leaf Boot Stage % Erect
FPT	0	0	0	68	100	1830	0	3	78	2	22	63	13
Charger	0	0	0	59	100	1541	3	7	55	0	30	53	17
Manhattan	0	0	0	26	100	2102	2	12	63	0	18	52	30

Measurements taken in Albany, Oregon
3 reps; 20 plants/rep = 60 data points
■ Cultivar under evaluation.

Table 3B 2001 Additional Morphological Measurements of the Panicle

Cultivar	Panicle Branch Pubescence % Present	Lemma Awn % Present	Leaf Blade Anthocyanin % Present	Seedling Anthocyanin % Present	Rachis of Panicle % Smooth	Seed Weight (mg per 1000 seeds)	Anther Color % Purple	Panicle Color % Purple	Panicle Re-Growth in Fall % Re-Grown	Flag Leaf Boot Stage % Re-curve	Flag Leaf Boot Stage % Horizontal	Flag Leaf Boot Stage % Semi-Erect	Flag Leaf Boot Stage % Erect
FPT	0	0	0	68	100	1924	2	0	17	0	6	82	12
Charger	0	0	0	35	100	1647	3	5	5	2	7	75	16
Manhattan	0	0	0	25	100	2136	3	3	2	0	8	75	17

Measurements taken in Albany, Oregon
3 reps; 20 plants/rep = 60 data points
■ Cultivar under evaluation.

200200074

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

EXHIBIT E STATEMENT OF THE BASIS OF OWNERSHIP

1. NAME OF APPLICANT(S)

724
11/14/04 Pennington Seeds, Inc

2. TEMPORARY DESIGNATION
OR EXPERIMENTAL NUMBER

FPT

3. VARIETY NAME

Integra

4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)

P.O. Box 290
 Madison, GA
 30650

5. TELEPHONE (include area code)

(404) 342 - 1234

6. FAX (include area code)

(404) 342 - 9644

7. PVPO NUMBER

2002 00074

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain.



YES



NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company?

If no, give name of country _____



YES



NO

10. Is the applicant the original breeder? If no, please answer the following:



YES



NO

a. If original rights to variety were owned by individual (s):

Is (are) the original breeder(s) a U.S. national(s)? If no give name of country _____



YES



NO

b. If original rights to variety were owned by a company:

Is the original breeder(s) U.S. based company? If no give name of country _____

11. Additional explanation on ownership (If needed, use reverse for extra space):

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original breeder, both the original breeder and the applicant must meet one of the above criteria.

The original breeder may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

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